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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/509,651	03/16/2005	Alexandre Ferrieux	4444-045	2278

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EXAMINER	
LENNOX, NATALIE	

ART UNIT	PAPER NUMBER
2626	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/509,651	FERRIEUX ET AL.	
	Examiner	Art Unit	
	Natalie Lennox	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 March 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) *1-6* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *7-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 March 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *Sept. 29, 2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This Office Action has been issued in response to the application filed on March 16, 2005, wherein claims 1-6 had been cancelled and claims 7-18 are new.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 7, 8, 13, and 14 are rejected under 35 U.S.C. 102(e) as being anticipated by Mitchell et al. (US 6,574,595).

As per claims 7 and 13, Mitchell et al. teach a method and speech recognition system for translating input data into at least one lexical output sequence; the method comprising decoding input data so

(a) sub-lexical entities represented by the said data are identified by using a first model determined by predetermined sub-lexical entities (Col. 3, lines, and 47-54)

(b) various possible combinations of the said sub-lexical entities are generated, as the sub-lexical entities are identified and with reference to at least one second model constructed on the basis of lexical entities, including storing a plurality of possible combinations of the said sub-lexical entities, the most likely combination being intended

to form the lexical output sequence (Col. 3, lines 58-67, Col. 4, lines 2-4 and 6-13, also Col. 7, lines 15-17).

As per claims 8 and 14, Mitchell et al. teach the translation method and speech recognition system according to Claim 7, further including validating, with reference at least to the second model, the storage of a combination (Col. 6, lines 3-5).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 9 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mitchell et al. (US Patent 6,574,595) in view of Garner (US Patent 7,212,968).

As per claims 9 and 15, Mitchell et al. teach the translation method and speech recognition system according to Claim 8 however, they do not specifically mention, wherein the validating of the storage of a combination is accompanied by an allocation to the combination to be stored of a probability value representing the likelihood of the said combination. Conversely, Garner teaches validating of the storage of a combination is accompanied by an allocation to the combination to be stored of a probability value representing the likelihood of the said combination (Col. 15, lines 16-24 and 33-35, wherein the point represents the path or combination and wherein the

scores or probabilities are stored in a storage associated with the specific point or combination.)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of validating of the storage of a combination is accompanied by an allocation to the combination to be stored of a probability value representing the likelihood of the said combination as taught by Garner for Mitchell's method and speech recognition system because Garner provides an apparatus and method for matching sequences of phonemes for the recognition of voice or typed queries (Col. 1, lines 13-17), wherein scores are computed for the combinations (represented by paths) in order to keep a cumulative score and just add the cost of propagating from one point to another for the subsequent combinations (Col. 15, lines 16-24).

5. Claims 10 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mitchell et al. (US Patent 6,574,595) in view of Garner (US Patent 7,212,968) as applied to claim 9 above, and further in view of Nahamoo et al. (EP 0715298 A1).

As per claims 10 and 16, Mitchell et al., as modified by Garner, teach the translation method and speech recognition system according to Claim 9, but they do not specifically mention wherein various validation operations relating to various combinations relating to one and the same state of the first model are executed contiguously in time. However, Nahamoo et al. teach various validation operations relating to various combinations relating to one and the same state of the first model are

executed contiguously in time (page 3, lines 16-20 and lines 30-33, wherein the likelihoods are the validations).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of various validation operations relating to various combinations relating to one and the same state of the first model are executed contiguously in time as taught by Nahamoo et al. for Mitchell's method and speech recognition system, as modified by Garner, because Nahamoo et al. provides for a reduction of search space in speech recognition using phone boundaries and phone ranking, wherein the determination of a probability (validation) for each transition (state) is made in order to obtain the phone models having the highest label probabilities for the labels in the string, which are the most likely phones to have produced the string (page 3, lines 27-29).

6. Claims 11, 12, 17, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mitchell et al. (US Patent 6,574,595) in view of Nahamoo et al. (EP 0715298 A1).

As per claims 11 and 17, Mitchell et al. teach the translation method and speech recognition system according to Claim 8, but Mitchell does not specifically mention wherein various validation operations relating to various combinations relating to one and the same state of the first model are executed contiguously in time. However, Nahamoo et al. teach various validation operations relating to various combinations

relating to one and the same state of the first model are executed contiguously in time (page 3, lines 16-20 and lines 30-33, wherein the likelihoods are the validations).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of various validation operations relating to various combinations relating to one and the same state of the first model are executed contiguously in time as taught by Nahamoo et al. for Mitchell's method and speech recognition system because Nahamoo et al. provides for a reduction of search space in speech recognition using phone boundaries and phone ranking, wherein the determination of a probability (validation) for each transition (state) is made in order to obtain the phone models having the highest label probabilities for the labels in the string, which are the most likely phones to have produced the string (page 3, lines 27-29).

As per claims 12 and 18, Mitchell et al. teach the translation method and speech recognition system according to Claim 7, but they do not specifically mention wherein the decoding step uses a Viterbi algorithm applied to a first Markov model having sub-lexical entities, under the dynamic control of a second Markov model representing possible combinations of sub-lexical entities. However, Nahamoo et al. teach the decoding step uses a Viterbi algorithm applied to a first Markov model having sub-lexical entities, under the dynamic control of a second Markov model representing possible combinations of sub-lexical entities (page 3, lines 41-47, wherein lines 41-43 describe the first model that outputs the label (or phoneme, or word, or acoustic

element) strings which are the ones "aligned" to the second Markov model as described in lines 44-47, also page 4, lines 5-11).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of the decoding step uses a Viterbi algorithm applied to a first Markov model having sub-lexical entities, under the dynamic control of a second Markov model representing possible combinations of sub-lexical entities as taught by Nahamoo et al. for Mitchell's method and speech recognition system because Nahamoo et al. provides for a reduction of search space in speech recognition using phone boundaries and phone ranking, wherein an input speech signal is converted into a label string or sequence of phonemes by a first model, the output label sequence is then decoded by matching the label sequence against existing word models (second model) using probabilistic algorithms such as Viterbi decoding and selecting as a result the combination with the highest probability (page 4, lines 5-6, and page 2, lines 37-39).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Natalie Lennox whose telephone number is (571) 270-1649. The examiner can normally be reached on Monday to Friday 9:30 am - 7 pm (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (571)272-7602. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NL 10/26/2007

TĀLIVALDIS IVARS ŠMITS
PRIMARY EXAMINER